

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) In a Packet Data Serving Node (PDSN), a method of releasing resources, comprising:

sending by the PDSN an access request message to a first AAA server for authentication of a node, wherein the node is a Mobile Node supporting Mobile IP;

receiving by the PDSN an access accept message from the first AAA server;

establishing by the PDSN a Mobile IP session as a Foreign Agent for the node when an access accept message is received from the first AAA server;

storing by the PDSN information associated with the node in resources associated with the PDSN;

receiving by the PDSN a disconnect request message from the first AAA server prior to expiration of a PPP session timer, wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network, wherein the second AAA server is a home AAA server associated with a home network of the node; and

releasing by the PDSN the resources when the disconnect request message is received, wherein the resources are released independent of expiration of [[a]] the PPP session timer;

wherein the resources comprise memory and the information comprises PPP information associated with a PPP session.

2-4 (Cancelled)

5. (Currently Amended) The method as recited in claim 1, wherein the information is associated with the Mobile IP session.

6-8 (Cancelled)

9. (Previously Presented) The method as recited in claim 1, wherein the access request message and access reply message are RADIUS messages, and the first and second AAA servers are RADIUS servers.

10. (Previously Presented) The method as recited in claim 1, wherein the disconnect request message comprises a source PDSN identifier identifying the PDSN, a username identifier identifying a user associated with the Mobile IP session, and a session identifier identifying a session associated with the user to be terminated by the PDSN, wherein the session is a PPP session.

11. (Cancelled)

12. (Previously Presented) The method as recited in claim 1, wherein the disconnect request message is triggered by a second access request message sent to the second AAA server by a second PDSN to which the node has roamed.

13. (Original) The method as recited in claim 12, wherein the disconnect request message is sent after an access accept message is sent by the second AAA server to the first AAA server.

14. (Original) The method as recited in claim 12, wherein the access request message and the second access request message each comprise a RADIUS access request message including a username identifier identifying a user associated with the Mobile IP session, a session identifier identifying a session associated with the user, and a PDSN identifier identifying the PDSN.

15. (Previously Presented) The method as recited in claim 1, further comprising:
sending by the PDSN a disconnect acknowledgement message indicating that the PDSN has successfully disconnected the user.

16. (Original) The method as recited in claim 15, wherein the disconnect acknowledgement message is sent to the first AAA server.

17. (Previously Presented) The method as recited in claim 1, further comprising:
sending by the PDSN a disconnect acknowledgement message to the second AAA server, the disconnect acknowledgement message indicating that the PDSN has successfully disconnected the user.

18. (Previously Presented) The method as recited in claim 1, further comprising:
sending by the PDSN a disconnect non-acknowledgement message indicating that the PDSN is unable to disconnect the user.

19. (Original) The method as recited in claim 18, wherein the disconnect non-acknowledgement message is sent to the first AAA server.

20. (Previously Presented) The method as recited in claim 1, further comprising:
sending by the PDSN a disconnect non-acknowledgement message to the second AAA server, the disconnect non-acknowledgement message indicating that the PDSN is unable to disconnect the user.

21. (Currently Amended) In a AAA server, a method of initiating the release of resources in a first Packet Data Serving Node (PDSN), comprising:
receiving by the AAA server an access request message from a second PDSN, the access request message including a username identifier identifying a user of a Mobile Node supporting Mobile IP, a session identifier identifying a session associated with the user, and a PDSN identifier identifying the first PDSN, wherein the AAA server is a home AAA server associated with a home network of the user;
sending by the AAA server an access accept message to the second PDSN in response to the access request message; and
sending by the AAA server a disconnect request message to the first PDSN indicating a request to release resources associated with the session, thereby enabling the first PDSN to release the resources prior to expiration of a PPP session timer; and
receiving by the AAA server a disconnect non-acknowledgement message from the first PDSN indicating that the first PDSN is unable to disconnect the user and release the resources associated with the session[[.]];
wherein the resources comprise memory and wherein the session is a PPP session.

22. (Original) The method as recited in claim 21, wherein the disconnect request message further indicates that the resources associated with the session are no longer needed.

23. (Original) The method as recited in claim 21, wherein the disconnect request message further indicates that a node associated with the user has moved.

24. (Cancelled)

25. (Original) The method as recited in claim 21, wherein the disconnect request message requests that the first PDSN disconnect the user for the session identified by the session identifier.

26. (Cancelled)

27. (Original) The method as recited in claim 21, wherein the disconnect request message comprises a source PDSN identifier identifying the first PDSN, a username identifier identifying a user associated with the Mobile IP session, and a session identifier identifying a session associated with the user to be terminated by the first PDSN.

28-30 (Cancelled)

31. (Currently Amended) In a first AAA server, a method of initiating the release of resources in a first Packet Data Serving Node (PDSN), comprising:

receiving by the first AAA server an access accept message from a second AAA server, the access accept message including a username identifier identifying a user of a Mobile Node supporting Mobile IP, a session identifier identifying a session associated with the user, and a PDSN identifier identifying the first PDSN, wherein the first AAA server is a visited AAA server associated with a foreign network, wherein the second AAA server is a home AAA server associated with a home network of the user; and

sending by the first AAA server a disconnect request message to the PDSN identifier identifying the first PDSN, the disconnect request message indicating a request to release resources associated with the session, wherein the disconnect request message is sent to the PDSN independent of whether a PPP session timer has expired and prior to expiration of the PPP session timer;

wherein the first PDSN releases the resources associated with the session in response to receiving the disconnect request message, wherein the resources are released independent of expiration of a PPP session timer and prior to expiration of the PPP session timer;

wherein the resources comprise memory and wherein the session is a PPP session.

32. (Original) The method as recited in claim 31, wherein the disconnect request message further indicates that the resources associated with the session are no longer needed.

33. (Original) The method as recited in claim 31, wherein the disconnect request message further indicates that a node associated with the user has moved.

34. (Original) The method as recited in claim 33, wherein the node is a mobile node.

35. (Original) The method as recited in claim 31, wherein the disconnect request message requests that the first PDSN disconnect the user for the session identified by the session identifier.

36. (Cancelled)

37. (Original) The method as recited in claim 31, wherein the disconnect request message comprises a source PDSN identifier identifying the first PDSN, a username identifier identifying a user associated with the Mobile IP session, and a session identifier identifying a session associated with the user to be terminated by the first PDSN.

38. (Cancelled)

39. (Previously Presented) The method as recited in claim 37, further comprising: receiving by the first AAA server a disconnect acknowledgement message from the first PDSN indicating that the first PDSN has successfully disconnected the user.

40. (Previously Presented) The method as recited in claim 37, further comprising: receiving by the first AAA server a disconnect non-acknowledgement message from the first PDSN indicating that the first PDSN is unable to disconnect the user.

41. (Original) The method as recited in claim 31, wherein the disconnect request message is sent when the access accept message is received by the first AAA server.

42. (Currently Amended) A non-transitory computer-readable medium storing thereon computer-readable instructions for releasing resources in a Packet Data Serving Node (PDSN), comprising:
computer-readable instructions for sending by the PDSN an access request message to a first AAA server for authentication of a node, wherein the node is a Mobile Node supporting Mobile IP;

computer-readable instructions for establishing by the PDSN a Mobile IP session as a Foreign Agent for the node when an access accept message is received from the first AAA server;

computer-readable instructions for storing by the PDSN information associated with the node in resources associated with the PDSN; and

computer-readable instructions for releasing by the PDSN the resources when a disconnect request message is received from the first AAA server, wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network, wherein the second AAA server is a home AAA server associated with a home network of the Mobile Node, wherein the disconnect request message is received prior to expiration of a PPP session timer, the disconnect request message triggering the release of resources associated with a PPP session such that the resources are released prior to expiration of the PPP session timer;

wherein the resources comprise memory and the information comprises PPP information associated with a PPP session.

43. (Currently Amended) A Packet Data Serving Node (PDSN) adapted for releasing resources, comprising:

means for sending by the PDSN an access request message to a first AAA server for authentication of a node, wherein the node is a Mobile Node supporting Mobile IP;

means for receiving by the PDSN an access accept message from the first AAA server;

means for establishing by the PDSN a Mobile IP session as a Foreign Agent for the node when an access accept message is received from the first AAA server;

means for storing by the PDSN information associated with the node in resources associated with the PDSN;

means for receiving by the PDSN a disconnect request message, wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network, wherein the disconnect request message is received prior to expiration of a PPP session timer, the disconnect request message triggering the release of resources associated with a PPP session, wherein the second AAA server is a home AAA server associated with a home network of the Mobile Node; and

means for releasing by the PDSN the resources associated with the PPP session when the disconnect request message is received such that the resources are released independent of whether [[a]] the PPP session timer has expired and prior to expiration of the PPP session timer;
wherein the resources comprise memory and the information comprises PPP information associated with a PPP session.

44. (Currently Amended) A Packet Data Serving Node (PDSN) adapted for releasing resources, comprising:

a processor; and

a memory, at least one of the processor or the memory being adapted for:

sending by the PDSN an access request message to a first AAA server for authentication of a node, wherein the node is a Mobile Node supporting Mobile IP;

receiving by the PDSN an access accept message from the first AAA server;

establishing by the PDSN a Mobile IP session as a Foreign Agent for the node when an access accept message is received from the first AAA server;

storing by the PDSN information associated with the node in resources associated with the PDSN;

receiving by the PDSN a disconnect request message, wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network, wherein the disconnect request message is sent to the PDSN prior to expiration of a PPP session timer, the disconnect request message triggering the release of resources associated with a PPP session; and

releasing by the PDSN the resources in which the information has been stored when the disconnect request message is received such that the resources are released prior to expiration of [[a]] the PPP session timer;

wherein the resources comprise memory and the information comprises PPP information associated with a PPP session.

45. (Currently Amended) A non-transitory computer-readable medium storing thereon computer-readable instructions for initiating the release of resources in a first Packet Data Serving Node (PDSN) at a AAA server, comprising:

instructions for processing by the AAA server an access request message received from a second PDSN, the access request message including a username identifier identifying a user of a Mobile Node supporting Mobile IP, a session identifier identifying a session associated with the user, and a PDSN identifier identifying the first PDSN;

instructions for sending by the AAA server an access accept message to the second PDSN in response to the access request message; and

instructions for sending by the AAA server a disconnect request message to the first PDSN indicating a request to release resources associated with the session independent of expiration of a PPP session timer, wherein the disconnect request message is sent to the first PDSN prior to expiration of the PPP session timer, the disconnect request message triggering the release of resources associated with the session;

wherein the first PDSN releases the resources associated with the session in response to receiving the disconnect request message, wherein the resources are released independent of and prior to expiration of a PPP session timer;

wherein the first PDSN sends a disconnect acknowledgement message to the AAA server indicating that the first PDSN has successfully disconnected the user when the first PDSN has released the resources;

wherein the resources comprise memory and wherein the session is a PPP session.

46. (Currently Amended) A AAA server adapted for initiating the release of resources in a first Packet Data Serving Node (PDSN), comprising:

a processor; and

a memory, at least one of the processor or the memory being adapted for:

receiving by the AAA server an access request message from a second PDSN, the access request message including a username identifier identifying a user of a Mobile Node supporting Mobile IP, a session identifier identifying a session associated with the user, and a PDSN identifier identifying the first PDSN;

sending by the AAA server an access accept message to the second PDSN in response to the access request message; and

sending by the AAA server a disconnect request message to the first PDSN indicating a request to release resources associated with the session prior to expiration of a PPP session timer;

wherein the first PDSN sends a disconnect non-acknowledgement message to the AAA server when the first PDSN is unable to disconnect the user and release the resources associated with the session when the first PDSN;

wherein the first PDSN sends a disconnect acknowledgement message when the first PDSN releases the resources associated with the session in response to receiving the disconnect request message, wherein the resources are released prior to expiration of a PPP session timer;

wherein the resources comprise memory and wherein the session is a PPP session.

47. (Currently Amended) A non-transitory computer-readable medium storing thereon computer-readable instructions for initiating the release of resources in a first Packet Data Serving Node (PDSN) at a AAA server, comprising:

instructions for processing by the AAA server an access accept message received from a second AAA server, the access accept message including a username identifier identifying a user of a Mobile Node supporting Mobile IP, a session identifier identifying a session associated with the user, and a PDSN identifier identifying the first PDSN, wherein the AAA server is a visited AAA server associated with a foreign network, wherein the second AAA server is a home AAA server associated with a home network of the Mobile Node; and

instructions for sending by the AAA server a disconnect request message to the PDSN identifier identifying the first PDSN, wherein the disconnect request message is sent to the first PDSN prior to expiration of a PPP session timer, the disconnect request message triggering the release of resources associated with the session, the disconnect request message indicating a request to release resources associated with the session such that the first PDSN releases the resources prior to expiration of [[a]] the PPP session timer;

wherein the first PDSN releases the resources associated with the session in response to receiving the disconnect request message, wherein the resources are released prior to expiration of a PPP session timer;

wherein the resources comprise memory and wherein the session is a PPP session.

48. (Currently Amended) A AAA server adapted for initiating the release of resources in a first Packet Data Serving Node (PDSN), comprising:

a processor; and

a memory, at least one of the processor and the memory being adapted for:

receiving by the AAA server an access accept message from a second AAA server, the access accept message including a username identifier identifying a user of a Mobile Node supporting Mobile IP, a session identifier identifying a session associated with the user, and a PDSN identifier identifying the first PDSN, wherein the AAA server is a visited AAA server associated with a foreign network, wherein the second AAA server is a home AAA server associated with a home network of the Mobile Node; and

sending by the AAA server a disconnect request message to the PDSN identifier identifying the first PDSN, wherein the disconnect request message is sent to the first PDSN prior to expiration of a PPP session timer, the disconnect request message triggering the release of resources associated with the session, the disconnect request message indicating a request to release resources associated with the session such that the first PDSN releases the resources prior to expiration of [[a]] the PPP session timer;

wherein the first PDSN releases the resources associated with the session in response to receiving the disconnect request message, wherein the resources are released prior to expiration of a PPP session timer;

wherein the resources comprise memory and wherein the session is a PPP session.

49. (Previously Presented) The PDSN as recited in claim 44, wherein the disconnect request message is not received from another PDSN.

50-52 (Cancelled)